PROCESS ACTIVITY - DETERMINE RISK AND SET CONTINGENCY

Activity	**Determine Risks and Set Contingency**
Description	**Determining project risks** is part of developing a risk management plan for a project as identified in the Project Management Process online guide. Risk Management is the process of maximizing the probability and consequences of positive risk events (opportunities) and minimizing the probability and consequences of negative risk events (threats) to the project objectives. In the context of cost estimating the cost impact of project risks (favorable or unfavorable) must be included to derive a total project cost.
Inputs	Estimate Package (e.g., complete notebook of all estimate related information) • Base Cost Estimate • Estimate Basis and Assumptions Previous project risk analysis WSDOT Cost Risk and Estimating Management Office Policies Project Management Online Guide (Develop Risk Management Plan)
Technique and Tools	Standard Contingency Percentage Risk Analysis CEVP® and CRA Workshop Processes Risk Management Plan Template Self Modeling Risk Management Plan Spreadsheet
Steps	1. Determine Level of Risk Analysis • Review the project: location; size; participants; type of work involved; general "risks" involved and their consequences; previous experience, etc. • Review *A Policy for Cost Risk Assessment* to determine the appropriate level of detailed risk analysis to be performed. Work with Region/Organization Management to determine the risk factors to be considered; the risk tolerance levels/thresholds to be used; and risk reporting and visibility requirements. • Communicate the level of Risk Analysis and Management requirements to the project team. 2. Identify Risks • Risk identification involves determining which risks might affect the project and documenting their characteristics. It may be a simple risk assessment organized by the project team, or an outcome of the CEVP®/CRA process. 3. Perform Qualitative and/or Quantitative Risk Analysis Performing a risk analysis requires either or both qualitative and

	quantitative analysis of risks. • **Qualitative risk analysis** assesses the general impact and likelihood of the identified risks and develops prioritized lists of these risks for further analysis or direct mitigation. The team assesses each identified risk for its probability of occurrence and its impact on project objectives. Project teams may elicit assistance from subject matter experts or functional units to assess the risks in their respective fields. • **Quantitative risk analysis** is a way of numerically estimating the probability that a project will meet its cost and time objectives. Quantitative analysis is based on a simultaneous evaluation of the impacts of all identified and quantified risks. Quantitative Risk Analysis is only performed on projects meeting the criteria identified in *A Policy for Cost Risk Assessment*. Contact the Cost Risk Estimating & Management (CREM) Office for assistance and guidance. 4. Determine Total Project Cost This step requires a project team decision on the range of costs for the project or a specific amount of cost contingency that will be added to the base cost estimate for a project.
Products	Revised Cost Estimate File • Total project cost estimate (could be reported as a range of project costs and/or a single project cost) • Revised Estimate Basis and Assumptions • Include results in Risk Report
Guidance	• The level of detail for a risk analysis should be commensurate with: o *A Policy for Cost Risk Assessment* o The project, its significance, and the consequences of the failure to meet objectives. o The severity of impact of the risks involved. o The "stage" of the project and the validity of the information available. • Generally, projects greater than $25 million but less than $100 million are required to use the CRA process. Projects greater than $100 million are required to use the CEVP® process. • When using a CRA or CEVP®, cost estimate validation should be conducted as part of the estimate review step but using an external expert(s) to review the base estimate basis and assumptions, quantities, unit costs and other items pertinent to the preparing the estimate. The intent is to provide a base cost without any contingency to cover uncertainty in the base and specific risk events.

	• The estimate should be shown as a range of project costs. • If a CRA or CEVP® is not conducted for the project, then the estimator should consider the uncertainty and potential risks assigned to the project and make a qualitative assessment of the potential cost impact. This evaluation should be a project team effort. The Self Modeling Risk Management Plan Spreadsheet can assist the project team in estimating costs for identified risks. • Engineers' Estimates use a four (4) percent contingency.